CLAIMS

1. Luminescent nanoparticles comprising

   (a) a core made from a luminescent metal salt selected from phosphates, sulfates or fluorides, being surrounded by

   (b) a shell made from a metal salt or oxide capable of preventing or reducing energy transfer from the core after its electronic excitation to the surface of the nanoparticle.

2. Luminescent nanoparticles according to claim 1, wherein the salt of the core and the shell comprise the same anion, said anion being selected from phosphates, sulfates or fluorides.

3. Luminescent nanoparticles according to claim 1 or 2 having an average diameter based on their longest axis of less than 30 nm.

4. Luminescent nanoparticles according to any of claims 1 to 3, wherein the average thickness of the shell does not exceed the average diameter of the core.

5. Luminescent nanoparticles according to any of claims 1 to 4 wherein the core is made from a preferably doped luminescent metal sulfate, phosphate or fluoride and the shell consists of a non-luminescent material.

6. Luminescent nanoparticles according to claim 5, wherein the core is made from a doped host metal sulfate, phosphate or fluoride, wherein the host metal is selected from group 2 (earth alkaline metals), group 3 (Sc, Y or La), group 13 (*e.g.* Al, Ga, In or Tl) or Zn and the dopant is at least one lanthanide metal selected

from Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, or Yb, or a transition metal selected from Cr and Mn.

7. Luminescent nanoparticles according to claim 5, wherein the core is made from a doped host metal sulfate, phosphate or fluoride, wherein the host metal and the dopant are selected from Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, or Yb.

8. Luminescent nanoparticles according to claim 7 wherein the core consists of $CePO_4$:Tb or $CePO_4$:Nd and the shell of $LaPO_4$.

9. Luminescent nanoparticles according to any of claims 1 to 4 wherein the core consists of a luminescent lanthanide sulfate, phosphate or fluoride and the shell consists of a lanthanide salt or oxide being different from the core material and preventing or reducing energy transfer from the core after its electronic excitation to the surface of the nanoparticle.

10. Luminescent nanoparticles according to claim 9 wherein the core preferably consists of a Nd sulfate, phosphate or fluoride and the shell consists of a Gd salt or oxide.

11. Process for the preparation of the nanoparticles according to any of the preceding claims, comprising the steps of

preparing a first mixture comprising an optionally doped, luminescent metal sulfate, phosphate or fluoride nanoparticles in an organic medium,

reacting said first mixture, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions at a temperature of 50 to 350 °C

until a shell has formed around said luminescent nanoparticles.

12. Process (A) according to claim 11, comprising the steps of

preparing a first mixture comprising optionally doped, luminescent metal sulfate, phosphate or fluoride nanoparticles in an organic medium,

heating said first mixture to a temperature of 50 to 350 °C,

adding to this first mixture at this temperature, dropwise and separately, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions, and

reacting the resulting mixture at this temperature until a shell has formed around said luminescent nanoparticles.

13. Process (B) according to claim 11, comprising the steps of

preparing a first mixture comprising an optionally doped, luminescent metal sulfate, phosphate or fluoride nanoparticles in an organic medium,

adding an anion source to said first mixture

heating the resulting mixture to a temperature of 50 to 350 °C,

adding thereto a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions, and

reacting the resulting mixture at this temperature until a shell has formed around said luminescent nanoparticles.

14. Process (C) according to claim 11 comprising the steps of

preparing a first mixture comprising an optionally doped, luminescent metal sulfate, phosphate or fluoride nanoparticles in an organic medium,

combining said first mixture, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions, and

heating the resulting mixture to a temperature of 50 to 350 °C until a shell has formed around said luminescent nanoparticles.

15. Process according to any of claim 11 to 14, wherein the organic medium being present in the first mixture and the organic complexing agent being present in the second mixture are identical.

16. Process according to any of claims 11 to 15, wherein the organic medium and the complexing agent are selected from mono -or dialkyl amines wherein the alkyl residues have from 4 to 20 C atoms, phosphororganic compounds, polyols and sulfoxides.

17. Process according to any of claims 11 to 16, comprising the steps of synthesizing the nanoparticle cores in said organic medium followed by reacting these cores without prior isolation.

18. Process according to any of claims 11 to 17, wherein the anion source, in particular phosphate, sulfate or fluoride source is used in excess molar amounts based on the stoichiometrically required amount for reacting with available shell-forming metal atoms.

19. Fluid or solid medium containing the nanoparticles according to any of claims 1 to 10.

20. Fluid medium according to claim 19 selected from an organic or aqueous dispersion medium, a coating composition, an ink or dye, a polymer composition, or an aerosol.

21. Solid medium according to claim 19 selected from a coating, ink or dye, a polymer composition, in particular a polymer film.

22. Use of nanoparticles according to any of claims 1 to 10 or the medium of claims 19 to 21 for light generation, printing or marking items and materials.